

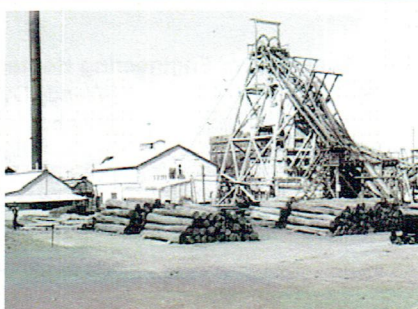
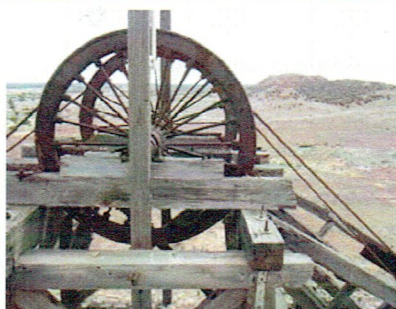
# SONS OF GWALIA

## - HEADFRAME AND WINDER ENGINE -

Engineering Heritage National Landmark

Commemoration Ceremony  
Gwalia Museum  
Gwalia WA

Sunday, 31 May 2015



# **PROGRAM**

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## **Acknowledgement of Traditional Ownership of Land**

Kado Muir

## **Formal welcome, recognition of distinguished guests and apologies**

Ian Maitland, Chairman of Engineering Heritage Western Australia

## **Introduction**

Ian Maitland of Francis Norman,  
President of Engineers Australia Western Australian Division

## **Engineers Australia Engineering Heritage Recognition Program**

Francis Norman

## **Gold Mining in Western Australia, history of the Sons of Gwalia Mine and the role of the Headframe and Winder Engine.**

Ian Maitland

## **Unveiling of Engineering Heritage Australia Interpretation Panel**

Wendy Duncan MLA  
Member for Kalgoorlie

## **Acceptance of Panel**

Peter Craig  
Shire of Leonora President

## **Closing Remarks**

Ian Maitland

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Following light refreshments a tour of the Gwalia ghost town and museum  
will be conducted.

## THE TIMBER HEADFRAME

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The original headframe was about 19 metres high with a 45-degree runway on the same incline as the mineshaft. It was slightly increased in height at a later date.

The headframe was constructed using oregon timber imported from the USA. At the time oregon was cost effective and was widely used for building and mine construction in Western Australia. Being relatively light weight (about half the density of locally available jarrah and karri hardwoods) it also had the advantage of being easier to transport and erect.

The headframe is the only large timber incline headframe surviving in Australia, and one of very few timber headframes of any size from the nineteenth century. There are only three surviving timber headframes in Western Australia. Sons of Gwalia headframe is the oldest.

The headframe has a landmark quality demonstrated by its visual impact around the towns of Gwalia and Leonora.

Basic Data:      Headframe height: approx. 20 metres  
                     Lifting capacity: 13 tons  
                     Maximum haul length: 5000 feet  
                     Headframe timber: Oregon

## THE WINDER ENGINE

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The original 50 horsepower Risdon engine was replaced in 1913 by a two cylinder Fraser and Chalmers engine rated at 1000 horsepower and capable of hauling 1500 feet per minute. The manufacturer, from Kent, England, built a wide range of mining machinery from around the turn of a century including many large winders. The company is now incorporated in the General Electric Co.

The engine is a direct acting, double-drum engine. The cylinders are 27in. diameter with 60in. stroke and diameter of drums is 10ft. It is fitted with Corliss valve gear and governor. The post brakes, friction clutches and reversing gear are all operated by steam, and the disc brakes are operated by foot levers. Both drums are loose on shaft, and are operated by friction clutches.

The engine is the largest of its type in Australia and one of only three surviving. It is a fine example of a large, steam-powered winding machine and an example of technological achievement of the period, one hundred years ago.

Basic Data:      Winder engine power: 1000hp  
                     Steam pressure: 120psi  
                     Haulage rate: 1500 ft per minute  
                     Drum diameter: 10 feet



# STATEMENT OF SIGNIFICANCE

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The Sons of Gwalia headframe and winder engine have cultural heritage significance for the following reasons:

- The headframe and winder engine form part of the Gwalia Museum Group which:
  - is valued by the local and wider communities for its associations with the early goldmining history of the towns of Leonora and Gwalia, and for its ongoing value as a tourist attraction, as evidenced by the efforts of the local community in restoration, preservation and presentation of the group;
  - presents a unique cultural environment in close proximity to a modern mining operation and contributes to a greater understanding of the mining operations of 1898 to 1963;
  - has a landmark quality demonstrated by the visual impact of the Headframe;
  - presents the past lifestyle to former residents and their descendants who return to see where and how family members lived and worked.
- The headframe is the only large timber underlie, or incline, surviving in Australia. It is one of only five large remaining headframes now in the country, and the largest of three in Western Australia.
- The 1912 Fraser & Chalmers Winder Engine is the largest of its type in Australia and one of only three surviving. It is a fine example of a large, steam-powered winding machine and an example of technological achievement of the period.
- The headframe had a short, but significant, association with Herbert Hoover, later a President of the United States of America.

